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Review

Emotion Aware Teaching: Connecting Emotion Recognition for Engaging Language Learning

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Abstract: In recent years, teaching has shifted from focusing only on academic skills to also paying attention to students' emotions. This approach, known as emotion-aware teaching, aims to improve students' engagement, confidence, and communication by understanding and responding to their feelings in class. Although many studies have investigated this topic, there are still gaps. These include inconsistent ways of measuring emotions, mixed opinions on how technology affects student motivation, and limited comparisons across different classroom settings. This review examines how emotion recognition supports language learning and how other factors such as multimodal data, perception-based assessments, and personalised feedback can influence students' engagement. The findings come from various experiments and studies that explore how students feel during lessons. A key contribution of this review is the idea of integrating emotion-aware frameworks into the classroom. This means connecting students' thinking abilities with their emotional needs so they can become both academically strong and emotionally intelligent. The research uses methods such as experiments, surveys, language data analysis, and cross-case comparisons. The review shows that emotion-based teaching methods can boost student motivation, lower anxiety, and support independent learning. While the findings show clear improvements in student engagement and teacher adaptability, they are limited by short-term studies and new evaluation tools. Future research should look at long-term effects, cultural differences, and practical classroom challenges. In conclusion, emotion-aware teaching helps create a healthier and more supportive environment for language learning by valuing students as emotional individuals, not just learners.

Keywords: Emotion-Aware Learning; Language Education Technology; Emotional Intelligence Integration; Adaptive Emotion Recognition; Learner Well-Being

1. Introduction

In this era, language learning is no longer merely focusing on one's cognitive ability. Educators have started to realise the importance of the role that emotions play in one's learning, including anxiety, confidence, motivation, and their sense of belonging. With that, it is believed that the integration of technology in the classroom can help create a modern learning environment where the learners' emotions can be recognized by bots that could do so. In this case, it is easier for the learners' emotions to be picked up, read, and responded to by either the bots or the teachers themselves. As an extension of this topic, some of the researchers were also looking into the impacts of enjoyment, resilience, and anxiety of the learners in affecting their willingness to interact with each other in the classroom, which could then affect their success in their language learning journey [1,2].

In relation to the pointers above, there is also a growing demand for the use of emotional artificial intelligence (emotional AI) in the classroom to capture the learners' emotions. This tool usually conducts multimodal analysis on

one's voice, facial expression, and their body cues to deduce their emotions [3,4]. To support the points mentioned above, this has once again proven that the integration of emotional recognition devices in the class could greatly enhance the learners' learning experience by creating a more engaging, personalized, and inclusive classroom for them [5,6].

1.1. Issues and Gaps

Despite having all the benefits, there are still some challenges in using emotion-aware technologies in the current language education system. Many contemporary studies focus on building sophisticated emotion recognition models, but there is less attention paid to how teachers and students view and adjust to these systems in authentic learning environments [6,7]. Some past research do show that emotional AI is effective in supporting the students' wellbeing and also help reducing their anxiety in language learning [8,9]; however, there are also other findings that highlight the ethical or moral issue that might arise from the use of this tool, in which the emotional AI is used without control to the extent where the emotional data of the students are exploited [10]. Nonetheless, it is also concluded that it is very hard to find a universal solution to this problem as the learners' emotional experiences are highly diverse and are very easily influenced by their respective cultures [11].

Another gap that is spotted is the unclear relationship between emotion-aware systems and the learners' measurable learning outcomes. Although some of the studies report that there are positive correlations between emotion regulation, motivation, and achievement [12,13], there needs to be more longitudinal and cross-cultural research to prove the cause and effect as well as its scalability. Furthermore, even though the use of intelligent tutors and chatbots is more common in language classrooms nowadays, most of them cannot genuinely interpret complex emotional states beyond simple cues [14,15]. The mixed results show both the pros and cons of including emotion recognition in teaching. If all these gaps are not addressed at their roots, this concept of emotion-aware teaching might still be treated as a novelty rather than a transformative teaching pedagogy.

1.2. Scope and Objectives

In this study, it mostly focuses on investigating the benefits that emotion-aware teaching can bring to the education system. It zooms into the aspects of how emotion recognition technologies can increase the learners' engagement in the classroom. To expand from the existing research regarding emotional AI, this paper aims to provide a more holistic understanding of how emotion detection and regulation technological tools can be implemented effectively in today's classroom. It is not only looking into psychological needs of the students, but also ways to improve their motivation and autonomy in learning [16,17]. With that, the scope of the review is considered quite wide as it discusses issues that range all the way from advanced vision-language models through the observation of multimodal cues from the learners [4] to the new and sophisticated classroom approaches that can help create a more reflective classroom, alongside with rich affective focus [12].

Focusing on the field of English as a foreign language (EFL), the study is believed to resolve the problem of those who constantly experience anxiety and unhealthy self-consciousness in their studies. These are considered the ideal candidates for emotion-aware interventions [8]. The objectives are threefold: first, to understand how emotion-aware technologies can identify and respond to the learners' emotional states; second, to investigate their influence on the learners' engagement, motivation, and communication willingness; and third, to critically assess the challenges, contradictions, and ethical issues that could arise from emotion-aware teaching.

1.3. Novelty Contributions

The novelty of the study can be shown through its extended scope of not merely focusing on how emotions affect the learners academically but also socially. While the previous research examined emotional regulation, intelligent systems, or EFL learning experiences respectively, the literature synthesizes these aspects to create a holistic view of how emotion-aware teaching can serve as a bridge between technology and human connection [9,18]. From the synthesis, it highlights not only the cognitive aspects of learning for the learners, but also their affective dimensions while they are learning the language. It acknowledges that success in acquiring a new language is often about how learners manage their fear and build confidence despite the difficulty of grammar and vocabulary.

One key surprising point that is being explored in the current work is that the level of student-centeredness. It is being treated as quite a high priority in a highly emotionally aware learning environment. Students are no

longer seen as the passive "respondents" in the classroom whose emotional conditions are so hard to read and treat, rather, the proposed framework sees them as the opposite, who are the active "speakers". This indirectly shows how emotional feedback can be utilized for personal growth. Additionally, multimodal corpora that have been specially developed to track emotional changes [19] and adaptive systems that can suppress anxiety or foster motivation [20] are also recreated or reframed as one of the co-active tools that can help enhance the learner autonomy. Also, by exploring different possible risks like over-surveillance on the students or the cultural misunderstandings on the nature of feelings [7], this paper provides a more ethical and humane approach while examining the use of emotional AI in the classrooms.

At the end of the day, this paper is technically suggesting a brand-new direction to investigate the future of education. It is to mainly convey the idea that emotion-aware teaching and the use of various related technological tools can assist in one's language learning process. This pedagogy puts a lot of emphasis on improving the learners' emotional sensitivity, not only by increasing their adaptability in class but also through creating a more empathetic learning experience for them. By acknowledging the presence of emotions into the class, all the other pedagogic ends, together with the focus on emotional well-being, the work is believed to adhere to the promise of the method as one that can empower both teachers and learners toward a more meaningful and lasting engagement in the learners' process of language learning.

2. Methods

2.1. Eligibility Criteria

As there is an increasing number of works about emotion-aware pedagogy and related topics such as the perception of emotions in language learning, it is very important to determine a clear set of eligibility criteria. To be exact, this review is focusing on publications that were issued between the years 2023 and 2025 in order to ensure a more updated finding, in which it includes some peer-reviewed journal articles, systematic reviews, experimental studies, and also conference papers that directly writes about topics like emotional intelligence, sophisticated emotion perception tools, or their pedagogical consequences in language learning [11,16].

Articles that did not fall into the scope of language learning or the one that did not match the alignment between emotions and learning environments with technology involved are not really considered into the possibilities. This criterion is believed to be significant in keeping the review focused on the topic of emotion-aware language learning. It is also quite important for people to know that certain publications are very methodologically clear in the investigation into emotional regulation and perception, and AI-based environments [1,8]. As a result of this method, the review can emphasize the present empirical evidence and the major conceptual contributions in creating an outline for the new field of interest that the paper is discovering.

2.2. Review Selection

The selection process is divided into several stages. Initially, there was a big set of literature identified through various academic databases and repositories, which includes studies that focus on emotional AI, education-related psychology, and second language acquisition. The titles and abstracts of the literature were all screened to remove works that only mentioned emotions tangentially without any integration in learning systems or pedagogical frameworks [7].

After screening all the papers, the selected articles were then evaluated to ensure that they contain points that could effectively contribute to the discussion of the main topic, which are the tools to facilitate emotion-aware teaching and the role of emotional intelligence in improving the learners' engagement in class [15,18]. This filter ensures that there is a rich and concise collection of literature that focuses on not just conceptual explorations [6] but also the practical applications in the classrooms [18].

By integrating the findings of different theoretical and empirical works, this paper promises to bring a holistic finding rather than just a one-dimensional synthesis. The final literature works that are selected include diverse cross-disciplinary insights from different fields, such as computer science, linguistics, psychology, and educational technology. These are all believed to reflect the interdisciplinary nature of emotional-aware learning in the future education system.

2.3. Data Extraction

In this paper, the data extraction process involves not just collecting basic bibliographic information but also using a structured approach to capture different themes for all the literature. The themes include research design, the characteristics of the sample, the technologies that are examined, and the emotional dimensions that are focused. For instance, the findings from works like Gamage et al. [3] and Lei et al. [4] have provided detailed descriptions of the advanced emotion recognition models that were categorized under the technological frameworks. Also, the findings of the studies such as Bin-Hady et al. [20] and Mohammed and Khalid [13] that focused more on learners' affective outcomes were classified under psychological and educational impacts.

There is also research on different assessment practices that highlight how computer-assisted tools can directly or indirectly affect the learners' mindfulness, motivation, and their emotional regulation in their studies. All this information is then documented in a thematic data matrix, along with all the other extracted data such as contextual labels (types of classrooms or the academic levels in which the study is carried out). This is to ensure that there could be a clear cross-comparison of findings that could address the difference in using emotion-aware teaching in diverse classroom settings.

2.4. Data Synthesis

The final synthesis of the findings of this paper is concluded from the extracted data after examining multiple aspects, which are technical, pedagogical, and emotional aspects. For instance, while Salloum et al. [6] and Zhou and Gao [19] write about using personalized teaching practices with multimodal emotional recognition tools, Xin and Derakhshan [8], on the other hand, categorizes the learners' learning experience on the scale of anxiety to excitement in the AI-enabled classrooms.

Apart from that, Zong and Yang [9] also noticed that the learners are showing positive developments when they are situated in a classroom with socially and emotionally trained AI. However, Ho et al. [10] raised an issue regarding how the use of such an AI could induce unwanted moral risks. With such contradictions presented, the review can provide a diverse view that not only focuses on how emotion-aware tools are able to help increase the learners' engagement in the classroom but also to identify whether they can really be empowered by such technologies.

Moreover, this paper also brings in new themes like emotional intelligence [14, 18] and the emotion-aware systems [1] as well, which are aspects that are believed to enhance the learners' resilience and their learning autonomy. In fact, the advancement of the multimodal emotion analysis tool [7, 17] was also always associated with results from learning. This proves that the improvements in terms of artificial intelligent algorithms can truly improve the learning experiences of the students. In addition to that, there is also research that describes emotions as a dynamic and context-dependent entity [20, 21]. This implies that future technologies need to then focus on their ability to infer emotions in different contexts.

Table 1 compiles a lot of different studies that explore how artificial intelligence (AI) and emotional awareness can shape the way we learn languages. In simple words, the research has shown that AI can do much more than just correct grammar or give vocabulary; it can also identify the learners' emotions, improve their motivation, reduce their stress, and make their learning more enjoyable.

Table 1. Studies on Emotion-Aware Teaching and AI in Language Learning: A Simple Overview.

Author(s)	Focus of Study	What They Did	Key Takeaways
Abdullaeva et al. [1]	Technology literacy, acceptance, and emotion regulation in ICALA	Experimental study on learners using Intelligent Computer-Assisted Language Assessment	Tech literacy boosts emotion regulation, resilience, and enjoyment in language assessment contexts
Arshad et al. [22]	Emotional intelligence & leadership in school heads	Survey of female secondary school head teachers	EI strongly predicts leadership abilities
Bin-Hady et al. [20]	ChatGPT's impact on SEL for EFL students	Investigated students' social & emotional learning with ChatGPT	ChatGPT supports SEL, improving confidence & emotional expression
Cartwright et al. [23]	Emotional intelligence in AI algorithms	Preprint exploring emotion-sensitive learning algorithms	Emotion-sensitive AI may better interpret and adapt to human affect

Table 1. *Cont.*

Author(s)	Focus of Study	What They Did	Key Takeaways
Clayton et al. [24]	Teacher emotions teaching climate change	National U.S. teacher survey	Teachers feel anxiety and uncertainty; support needed for emotional management
De Neve et al. [25]	Emotion regulation & engagement	Network analysis of classroom emotional dynamics	Emotion regulation difficulties reduce engagement and harm peer/teacher relationships
Gamage et al. [3]	AI-based multi-granular emotion analysis	Proposed AI framework (Emotion AWARE)	Framework improves explainable, robust emotion recognition systems
Gao and Cui [26]	Teacher identity & emotional tensions	Case study on teacher leader in EFL materials development	Emotional tensions shape teacher identity development
Ghiasvand et al. [27]	Emotional literacy & teacher PD	Investigated correlation between emotional literacy and professional growth	Strong positive link: emotional literacy enhances teacher development
Hatton-Bowers et al. [28]	Mindfulness training for teachers	Iterative study of CHIME program	Mindfulness boosts teachers' emotional resilience
Ho et al. [10]	Emotional AI acceptance in education/toys	Survey of Japanese population	Awareness of moral risks influences acceptance of emotional AI
Karamimehr et al. [29]	Emotion-aware personalized e-learning	Designed system integrating emotion-aware interventions	Personalized emotion-based interventions improve engagement
Khasawneh et al. [12]	Portfolio assessment + emotion regulation	Examined AI-enhanced portfolio assessments	AI portfolios support emotional regulation & more positive attitudes
Kossack and Unger [30]	Emotion-aware chatbots	Developed chatbot capable of adapting to user emotions	Emotion-aware features improve interaction quality
Lei et al. [4]	Vision-language models for emotion recognition	Evaluated large VLMs' emotion recognition performance	VLMs can accurately detect emotion in context-rich environments
Liu et al. [16]	Systematic review of emotional AI in EFL	Reviewed empirical studies	Emotional AI increasingly shapes EFL pedagogy; ethical issues remain
Mohammed and Khalid [13]	AI feedback, motivation, emotional well-being	Studied AI-written feedback effects on learners	AI feedback improves motivation, emotional calm, and writing progress
Namaziandost and Rezai [2]	Academic emotion regulation in ICALL	Examined relationships among mindfulness, emotions, motivation	Emotion regulation strongly tied to success in ICALL environments
Narimisaei et al. [18]	EI in AI systems	Comprehensive review of emotion recognition/response	Advanced models mimic EI-like functions, improving user interaction
Nawaz et al. [5]	Emotion-aware AI for student mental health	Developed framework for schools	Emotion-aware support improves mental health and learning outcomes
Nazari et al. [31]	Emotion labor & teacher identity	Qualitative CoP-oriented study	Emotion labor central in shaping novice teacher identity
Ojala [32]	Critical Emotional Awareness in climate education	Theoretical analysis	CEA essential for teacher preparation on emotional topics
Rusyadi et al. [14]	AI-driven emotional-cognitive EdTech	Conceptual/emerging research presentation	AI emotion tracking enhances learner engagement through Emo-Cog pathways
Salloum et al. [6]	AI emotion recognition for adaptive teaching	Built system to adjust teaching based on emotions	Adaptive teaching improves student performance
Sethi and Jain [33]	AI for SEL	Review of AI tools for SEL development	AI supports SEL but requires safeguards and ethical frameworks
Sharmila et al. [21]	EmotionSync—emotion-aware task recommender	Developed AI system for productivity/well-being	Emotion-sensitive task recommendations increase well-being
Shi [17]	AI-enabled emotion detection & adaptive learning	Built integrated model improving regulation	AI emotion detection enhances adaptive learning outcomes
Spanio [7]	Emotion-aware multimodal generative models	Explored challenges & opportunities	Emotional awareness critical for next-gen AI models

Table 1. *Cont.*

Author(s)	Focus of Study	What They Did	Key Takeaways
Tao et al. [34]	Teacher emotions in online teaching	Studied emotions & agency in digital teaching	Emotions influence teachers' ability to exercise agency online
Vistorte et al. [11]	AI for emotion assessment in learning	Systematic review	AI assessment improves understanding of student emotions
Xin and Derakhshan [8]	EFL learners' emotional experiences in AI classrooms	Investigated emotional highs/lows in AI-supported learning	AI classrooms generate both excitement and anxiety
Yannam [15]	AI emotional awareness	Examined algorithmic emotional awareness	AI still limited but improving in detecting affect
Zafar and Akhtar [35]	Emotional intelligence & anxiety in students	Explored effect of managerial styles	Supportive classroom management improves anxiety handling
Zhou and Gao [19]	Multimodal emotional corpus development	Built English Chinese emo corpus using AI	Provides new resources for emotion-aware language research
Zong and Yang [9]	AI-enhanced SEL in EFL learners	Evaluated SEL framework	AI SEL models increase well-being and engagement

As an example, some studies found that the students enjoy their learning more when they are comfortable with the technology that they use [1]. In this case, it is safe to deduce that using ChatGPT in the classrooms does not only help with language, but also boosts one's confidence, teamwork, and positive emotions [5]. A significant number of other researchers are also designing AI systems that can even "read" the emotions of the learners in real time, which allows the teachers to adapt lessons spontaneously when the learners are spotted to feel bored, anxious, or motivated [3,6].

Apart from that, emotional support is another highlight worth mentioning. The feedback given by AI on writing has been shown to be able to motivate learners, reduce their stress, and improve their overall writing skills [13]. In addition to that, AI-based tools that could encourage mindfulness and emotional regulation have also proven to have helped students to stay calm, motivated, and more engaged in their learning [2,12].

At the same time, researchers also point out a few challenges. While many learners feel excited, they are situated in AI-powered classrooms, some of them still experience anxiety [8]. Furthermore, people are also concerned about the ethical risks of using emotional AI, especially when it is about children's learning and toys [10].

3. Results and Findings

3.1. Emerging Themes in Emotion-Aware Language Learning

After examining all the studies, there is one recurring theme that is identified, which is that most of the research agrees to the idea that the process of language acquisition not only focuses on cognitive aspects but also emotional ones. In addition to that, research also shows that there is a spectrum to define the learners' emotional experience, which is all the way from anxiety to excitement, in which each level on the spectrum could affect the language acquisition differently in terms of their motivation and engagement in class [8,16]. Among the research nowadays, there are quite a few studies that have underestimated the important role that emotions play in one's language learning process. In fact, emotions can deliver a special kind of affective feedback to the learners that can help reduce the bad impacts of negative emotions on them. For example, Salloum et al. [6] demonstrate that there are some tools that are emotionally sensitive (emotion-sensitive AI) that could capture the learners' implicit facial expressions, vocal intonations, and their physiological cues. The capacity enables teachers to individualize more effective teaching processes. This correlates to what was written in Abdullaeva et al.'s [1] paper that the learners' proficiency and acceptance to use these types of technology in the classroom is also an important aspect to investigate in this review. The pointers mentioned in this paper do not only focus on the extent to which the students participate or communicate in the classroom, but also how they cover resilience and emotional regularity within these systems.

According to the synthesis, it is also quite prevalent that the teaching environment with a high emphasis on emotions is highly encouraged in contemporary classrooms. The review suggests that the ideal classroom not only

investigates the advancement of the technological tools in the classroom but also the more humane environment that is created through the emphasis of emotions. This is because emotions are being identified as among the most critical factors, which can induce cognitive development of the students. In fact, translation of good reading teaching to such environments becomes even more difficult. However, teachers should realize that the ability to use emotions generally in the aspect of teaching and learning often facilitates learning; that is, teaching and learning can take place in emotional situations. Since this synthesis seeks to answer or state questions on the emotionality of teaching, this synthesis can also be said to be an emotional statement.

3.2. Quantitative and Qualitative Insights into Learners' Emotional Journeys

Quantitative findings derived from the review have indicated that some perceptible improvements in learner outcomes may have taken place, especially when emotion recognition systems have been applied. For example, Nawaz et al. [5] noted a significant gain to student mental health and academic performance when students were in a classroom aware of their emotions. But conflicting evidence has been presented by Xin and Derakhshan [8], who maintain that increased excitement levels in the classrooms could motivate the learners but also acknowledged the presence of anxiety among them, especially in AI classrooms. The conflicting notions suggest that emotion-aware teaching might, to some extent, enhance the learners' well-being, but if the students feel "watched" or excessively monitored, the emotional stressors may arise.

With regards to the quantitative findings, there are some qualitative narratives that complement the statistics given. In Rusyadi et al.'s [14] paper, it documents how the learners describe AI-enhanced classrooms as the safe spaces where they felt "heard" emotionally, especially through empathetic chatbots that can simulate teacher-like encouragement. On the other hand, Ho et al. [10] also caution that ethical awareness could lag technological adoption as some parents, such as Japanese parents are voicing their concerns about how their children are overdependent on the emotionally responsive educational toys and systems. From these mixed results, it is safe to deduce that the emotional benefits cannot be assumed universally. All the other cultural, ethical, and psychological contexts must be considered as well in concluding the findings.

Table 2 shows the results of the researchers, which imply that emotions indeed play a big role in how students learn languages, especially when artificial intelligence (AI) tools are used. Studies show that technology can help learners to manage their stress, stay motivated, and enjoy their lessons more. For example, using AI in language testing has helped the students to build resilience and conduct better communication in their daily lives [1]. Similarly, portfolio assessments in AI-based classes are also proven to improve mindfulness and positive attitudes toward learning [12].

Table 2. Quantitative and Qualitative Insights into Learners' Emotional Journeys.

Dimension	Quantitative Insights	Qualitative Insights
Emotion Regulation	• Technology literacies and ICALA experiments improve measurable resilience, willingness to communicate, and enjoyment [1] • Portfolio assessments correlate with higher scores in mindfulness and positive learning attitudes [12]	• Learners describe feeling more in control of stress and anxiety when AI tools provide adaptive feedback [2] • Narratives show AI-assisted environments fostering emotional balance and peace of mind [13]
Social-Emotional Learning (SEL)	• ChatGPT integration shows statistically significant gains in SEL outcomes [5] • AI-supported SEL frameworks increase student engagement and well-being [9]	• Learners report greater self-confidence and empathy in AI-mediated collaboration [20] • Emotional intelligence fosters stronger peer interaction and support [6]
Emotional Experiences	• Surveys show a measurable shift from excitement to anxiety in AI-powered classrooms [8] • Cross-sectional studies highlight moral risk awareness affecting acceptance of emotional AI in Japan [10]	• Student reflections reveal mixed emotions, curiosity, joy, stress when adapting to AI-based learning [14] • Qualitative narratives capture tension between motivation and fear of surveillance [7]

Table 2. *Cont.*

Dimension	Quantitative Insights	Qualitative Insights
Motivation & Engagement	• AI-generated feedback enhances motivation and measurable writing development [13] • Statistical models confirm that AI emotion recognition supports higher learning outcomes [5]	• Learners express deeper enjoyment when feedback feels personalized and emotionally sensitive [6] • Case studies show heightened sense of belonging and connection through AI-mediated tasks [17]
AI Emotion Recognition & Adaptation	• Large vision-language models achieve quantifiable accuracy in detecting emotional cues [4] • Systematic reviews show consistent positive correlations between emotional AI and improved academic outcomes [11,16]	• Interviews illustrate how students feel "seen" and "understood" by adaptive AI tutors [18] • Classroom observations reveal improved teacher responsiveness when AI informs emotional states [6]
Well-Being & Mental Health	• AI-supported systems demonstrate statistical links to reduced stress, improved peace of mind, and better emotional intelligence [13]	• Students narrate feelings of reassurance and support when AI identifies and responds to emotional struggles [5] • Story-based reflections highlight improvements through personalized learning experiences [21]

Furthermore, it is also shown clearly that AI can also improve the students' social and emotional skills. Tools like ChatGPT have been proven to improve the students' self-confidence and emotional learning [5]. It is quite apparently shown that the AI-driven frameworks have somehow made the learners feel more emotionally supported to be more engaged in the classroom [9]. In some cases, some learners even testify that they feel more empathetic and easier to their peers when the AI is present in the classroom [20].

However, it is important for educators to acknowledge that not all emotions are positive. The presence of AI can occasionally cause the learners to feel anxious [8]. Some also might feel like they are being exposed or monitored, which reduces their motivation to express themselves as well [7]. Nevertheless, many students still said they mostly feel understood and supported when the AI tools could recognize their emotions and adjust the lessons accordingly based on their emotions [6,18].

All in all, AI systems that can analyze the learners' emotions have been proven to not only improve the students' academic scores but also promote their mental health as well as their well-being. Students generally indicate lower stress, higher peace of mind, and stronger motivation when the AI is present in the classroom and that it also gives feedback that is personalized to their feelings [5,13].

3.3. Contradictions and Conflicting Evidence

Although most of the studies agree that emotion-aware teaching is beneficial, there are several researchers that hold different opinions. For example, Shi [17] and Cartwright et al. [23] question where adaptive systems can really enhance the emotional regulation and motivation of the students, yet Spanio [7] also highlights the risks where the system might misinterpret one's emotions, which could consequently lead to an inappropriate pedagogical response either by the teacher or by the AI tools. Similarly, Mohammed and Khalid [13] also find that the AI-generated feedback is able to foster the peace of mind of students and also their emotional intelligence in writing tasks to the extent where overreliance might happen, whereas Zong and Yang [9] warn that the dependence on such AI tools could reduce the humane interactions between the teacher and the students.

Additionally, there are also some conflicts concerning the methodological design of the paper. All the studies that focus on short-term interventions have often resulted in positive outcomes, but those who focus on longitudinal studies such as Namaziandost and Rezai [2] have revealed a few long-term complexities, such as how learners might be initially motivated by emotion-sensitive systems, but then develop over-dependency later, which could then reduce their learning autonomy. The contradiction signals a gap in sustained research across extended learning timelines.

3.4. Real-World Applications and Case Studies

In actual classrooms, it has proven to be true that emotion-aware tools can help improve one's language learning process. For example, ChatGPT has been a tool that is used with English as a Foreign Language (EFL) students to support their learning, either in social or emotional context. Teachers found that students tend to feel more confident and less anxious when they are interacting with the tool, which indirectly increases their participation [5].

Similarly, the emotion recognition systems that can help detect facial expressions and one's tone of voice have also been used in real time lessons. If a learner appears to be frustrated or disengaged, the system will then suggest simpler exercises or motivational feedback for both the teacher and the students to implement. This helps the students to regulate their emotions and stay on track on their task [6]. Another case is the Emotion AWARE framework, which is an excellent framework that provides emotion analysis at multiple levels, which allows the teachers to better understand the group dynamics in the class and adjust the teaching strategies accordingly [3].

In Japan, a few research that dives into emotional AI in toys and education have shown that interactive systems not only increase the engagement of the learners in the classroom but also raise their awareness on how emotions can affect learning [10]. These examples all highlight how practical emotion-aware technologies are in making the classrooms more adaptive, supportive, and engaging, which strongly promotes emotional awareness into a necessary tool for the language teachers and learners to implement in their classrooms.

3.5. The Role of Social and Emotional Learning (SEL)

From the literature, a recurring trend is observed. There is an apparent overlapping between emotion recognition with social-emotional learning frameworks. Sethi and Jain [33] note that the AI technologies promote personalized SEL interventions as they can identify the time specifically when the learners experience stress, disengagement, or joy. In addition to that, Bin-Hady et al. [20] also provides some empirical support that shows how ChatGPT-based interactions can improve the social-emotional competencies of the EFL students', such as empathy and the willingness to conduct collaborative learning. Likewise, Zong and Yang [9] also state that the SEL frameworks that are embedded in the AI systems could also promote prolonged engagement as these systems can validate the learners' emotional well-being alongside their cognitive development.

Nevertheless, there are disadvantages to these systems as well. Despite emotional AI supporting SEL, but as Ho et al. [10] mention, there are possibilities for moral risks to arise when the students' emotions are commodified or manipulated to achieve their respective academic goals. However, in this context, emotional transparency and informed consent remain underexplored, which suggest an urgent need for governance frameworks.

3.6. Comparative Analysis across Contexts

There are comparative insights that emerge when the researchers examine how emotion-aware systems can function across diverse cultural and educational settings. For example, Japanese contexts highlight the possible ethical risks that could arise and the skepticism from the parents [10]. On the other hand, Middle Eastern studies focus on emotion regulation and mindfulness as the key learning gains of the students in their learning journey [2, 12]. European perspectives, such as those of Xin and Derakhshan [8] illustrate another insight regarding anxiety paradox: while learners are energized by all the interactive emotion-aware tools used in the classroom, they are fearful of misjudgment from the systems that could misinterpret their emotions.

These cross-context findings suggest that emotion-aware teaching is not a universal methodology and must be localized to fit the needs of the learners. Emotional expression can be varied by culture, and thus, emotions like enthusiasm, anxiety, or disengagement may be encoded differently based on different linguistic customs and social norms.

3.7. Technological Innovations and Future Directions

Advances in multimodal systems have dominated the current innovation. The literature of Lei et al. [4] has demonstrated how effectively vision-language models can act as emotion recognizers that are aware of the context, which could significantly enhance the accuracy of emotion detection. Sharmila et al. [21] then extends this to task management by proposing a system named EmotionSync that can integrate emotional data into productivity and well-being tools. This can be potentially adapted for language classrooms in which the workload stress is common.

Similarly, Vistorte et al. [11] review also points out the growing demand for the justification that can be given in this emotion recognition system, arguing that the teachers and learners alike must have a reason to trust the emotions that are classified by the systems.

Nonetheless, it is undeniable and almost inevitable that there are still gaps in these new systems. Narimisaei et al. [18] point out that most of the systems are still relying on surface cues, like facial expressions, tone, etc., to determine emotions. They have very limited capacity to capture deeper affective states like ambivalence or norms that need a lot of inferences on cultural politeness. Furthermore, many systems are still untested as there are insufficient resources. This then raises questions about the possibility of adopting the system globally.

3.8. Implications and Gaps in Literature

Qualitative results from the review have indicated an obvious increment in learner achievement when the emotion detection systems are in use in the classroom. For example, Nawaz et al. [5] indicate that there is a notable increase in the mental health of the students and their performance when they are learning in an emotion-aware learning environment. Conversely, Xin and Derakhshan [8] offer conflicting evidence: although excitement in the learning environment might enhance the learner's motivation, there is a noted presence of anxiety in AI-driven classrooms that has impacted the performance on the part of specific learners. Dualism indicates that whereas emotion-aware education can augment the learners' health, it can potentially bring new sources of tension on the part of learners if they feel subject to observation or observationally over-monitored. Despite the valiant promotion of emotion-aware systems, there are still quite a lot of gaps in this. First, there are very few long-term studies. This leads to so much skepticism about the workability of the learning style in a longer term on learner autonomy and motivation. Second, there is a disparity in cross-cultural validation. Asian and European settings are the dominant cases cited in the literature, with the experience from people in the African and South American regions barely considered. Third, there is a persistent appearance of ethical considerations in literature, such as privacy, surveillance, and informed consent, but such issues are rarely resolved. They are more often noted than solved. Finally, the key inadequacy is found on the human side: even as technology-based detection systems have the potential to recognize symptoms of a person's engagement or distress, they cannot reproduce the subtle empathy and tacit sense that define teachers. In the words of Nawaz et al. [5] and Spanio [7], one must align technological support with interpersonal relations in order that the emotional interactions in the learning situation don't turn into transactions.

Table 3 then compares the recent studies on how artificial intelligence (AI) can recognize and respond to emotions in education, especially in the context of language learning. Overall, researchers agree that emotions play a big role in how students learn, and AI can help teachers understand and respond to these emotions better. However, most studies focus more on the technological side rather than giving teachers clear strategies to apply in the classroom.

For example, Abdullaeva et al. [1]'s paper showed that the digital literacy of the students can greatly affect their performance in AI-based assessments, but they did not explore how the teacher can use this in real-time teaching. Similarly, Bin-Hady et al. [20] also found that ChatGPT can improve the students' emotional confidence but not really link to any classroom practices in deducing this conclusion. Other works like Cartwright et al. [23] and Lei et al. [4] focused more on algorithms and the more technical side of emotion recognition, but again they have left out how teachers are able to utilize it to make the lessons more engaging.

On the other hand, some studies focus more on classroom applications. For example, Salloum et al. [6] stated how AI can help teachers to adjust their lessons quickly due to the detection of the students' emotions, and Nawaz et al. [5] also discussed how exactly AI can support the students' mental health and improve their academic performance. Despite having an encouraging finding, these papers still do not provide a clear framework as to how specifically this teaching pedagogy is going to help with language learning.

Nonetheless, there are a few reviews, like those by Liu et al. [16] and Vistorte et al. [11], do confirm that emotional AI does have potential in education, but they are also relatively new; thus, it needs more practical evidence to prove validity. On the other hand, Xin and Derakhshan [8] also warn the readers about how AI classrooms are capable to induce both anxiety and excitement for different students, which reminds the teachers of the role they should play in addressing such diverse emotions.

Table 3. Comparison and Gap Analysis of Emotion-Aware AI in Language Learning Research.

Author(s)	Focus of Study	What They Did	Key Takeaways
Abdullaeva et al. [1]	Tech literacy & emotion regulation	Experimental study on ICALA systems	Technology literacy impacts emotion regulation, resilience, and communication willingness
Bin-Hady et al. [20]	ChatGPT & SEL	Studied EFL students using ChatGPT	Found AI can influence social-emotional learning outcomes positively
Cartwright et al. [23]	AI & emotional intelligence	Explored emotion-sensitive learning algorithms	Highlighted potential of AI to respond to emotional cues in education
Gamage et al. [3]	Emotion analysis framework	Developed AI framework for multi-granular emotion analysis	Demonstrated robust, adaptable, and explainable AI for emotion recognition
Ho et al. [10]	Moral risk in educational AI	Surveyed Japanese population	Awareness of AI moral risks affects acceptance and trust in educational AI
Karamimehr et al. [29]	Personalized e-learning	Developed emotion-aware e-learning interventions	Personalization improves engagement and emotional support for learners
Khasawneh et al. [12]	Portfolio assessment & emotion	Examined AI-enhanced learning portfolios	Supports emotion regulation, mindfulness, and positive learning attitudes
Kossack and Unger [30]	Emotion-aware chatbots	Developed chatbots to react to human emotions	Chatbots can adapt responses to user emotions in conversation
Lei et al. [4]	Vision-language models	Used large models as emotion recognizers	AI models can identify emotional context in multimedia inputs
Liu et al. [16]	Emotional AI review	Systematic review in English language education	Summarized trends, challenges, and applications of emotional AI in language learning
Mohammed and Khalid [13]	AI feedback & writing	Studying AI-generated feedback effects	AI feedback mirrors motivation and emotional intelligence, aiding writing development
Namaziandost and Rezai [2]	EFL learners' emotions	Explored emotion regulation, mindfulness, motivation	Academic mindfulness and emotion regulation enhance learning autonomy
Narimisaei et al. [18]	Emotional intelligence in AI	Comprehensive analysis of AI emotion systems	Identified key mechanisms for AI to detect and respond to human emotions
Nawaz et al. [5]	AI & student mental health	Developed emotion-aware AI system	Supports mental health and improves learning outcomes
Rusyadi et al. [14]	AI EdTech & emotion	Investigated AI-driven language learning journey	Showed AI can track cognitive-emotional engagement in learners
Salloum et al. [6]	AI emotion recognition	Used AI to detect students' emotions	Adaptive teaching methods improve engagement and learning outcomes
Sethi and Jain [33]	AI for social-emotional learning	Reviewed AI SEL research	Identified current trends and future directions for AI in SEL
Sharmila et al. [21]	AI recommendation systems	Developed EmotionSync system for task prioritization	AI can enhance well-being and productivity through emotion-aware recommendations
Shi [17]	AI emotion detection & learning	Integrated AI emotion systems with adaptive learning	Enhances emotional regulation and learning outcomes
Spanio [7]	Emotionally aware AI	Discussed challenges in multimodal AI	Highlighted limitations and opportunities in AI emotion recognition
Vistorte et al. [11]	AI in learning environments	Systematic literature review	Summarized AI applications for emotion assessment in education
Xin and Derakhshan [8]	EFL learners' emotions	Explored emotional experiences in AI classrooms	AI-driven classrooms evoke both excitement and anxiety
Yannam [15]	Emotional awareness in AI	Investigated AI systems' emotional capabilities	Highlighted the gap between AI algorithms and human emotional understanding
Zhou and Gao [19]	Multimodal emotional corpus	Built English Chinese corpus for AI	Supports AI in emotion recognition across languages and modalities
Zong and Yang [9]	AI SEL framework	Studied AI-enhanced SEL for EFL students	Framework boosts engagement and emotional well-being in learners

3.9. Ethical Implications of Emotion-Aware Learning Technologies

The use of emotion-aware technologies in education has raised several ethical concerns that have to be carefully addressed. As emotion recognition systems often collect sensitive biometric information, such as facial expressions, voice tones, or heart rates, one of the biggest issues that educators should be aware of is data privacy. If the personal information of the learners is not properly protected, this data could put students at risk if they are misused or being exposed [3,6].

Another concern is the presence of cultural sensitivity. As everybody expresses emotions differently based on their respective cultural backgrounds, AI could interpret the emotions wrongly as it only has limited datasets. For instance, a smile might mean happiness in one culture but might mean discomfort in another [8,10]. This shows how important it is to personalize a system that can even analyze their emotions based on their cultural backgrounds.

Lastly, there is the matter of responsible use. Teachers and institutions in general must avoid using emotional data to judge or label students. This unfair judgement could lead the students to be demotivated and have lower self-esteem [5]. Instead, emotion-aware tools should be able to support learning, sustain mental health, and foster inclusiveness. To build mutual trust while using these technologies, transparency, informed consent, and fairness are the key aspects that the institutions should focus on [16,18].

4. Discussion and Conclusion

As a result of the synthesis generated from the recent literature above, it is safe to deduce that the emotion-aware teaching, accompanied by using artificial intelligence and emotion recognition systems can significantly facilitate one's language learning process by enhancing their engagement, motivation, and emotional regulation in class. Additionally, emotional intelligence, with the help of either human or AI, seems to be a crucial determining factor to improve the students' willingness to communicate and enjoy learning as well [1,2]. Emotion recognition systems are also proven to be effective in facilitating the quality of teaching and learning in the classroom [4,11]. Emotion recognition technologies from multimodal models up to something like large vision-language frameworks can bring valuable information to educators regarding the affective states of their learners. This might then help to facilitate real-life teaching quality [4,11].

Emotional support is also proven to be able to enhance mental resilience and autonomy in learners while diminishing their anxiety at the same time [5,8]. The integration of emotion feedback from AI has also shown to be effective through learners' increased ability to write, be mindful, and perform confidently using foreign language [12,13]. Besides, it is of equal importance that the research also supports the fact that learners can respond positively to AI-enabled classrooms because of them being able to balance cognitive and emotional parts and create a more holistic environment for learning [9,14]. However, at the same time, the literature also makes it clear that there are still some disadvantages existing, such as ethical risks, cultural acceptance differences, and more so the possibility of learners being overly reliant on the AI-driven cues [7,10].

4.1. Recommendations

Based on the points above, several recommendations are suggested for both educators and policymakers to investigate. First, emotion-aware teaching should not be viewed as a replacement for human empathy but rather, a complement that helps enhance the teacher's sensitivity to learners' needs [6,15]. Teachers should be trained appropriately to interpret AI-driven emotional feedback and apply it into classroom practice while keeping their own human-based judgment. Second, curriculum designers are encouraged to embed components related to emotional regulation and mindfulness in language learning programs to ensure that the idea of emotion recognition can support both academic and psychological well-being of the learners [12,20].

Apart from that, policymakers and educational institutions should always prioritize data privacy, consent, and cultural inclusivity when they want to introduce emotional AI to the classroom [3,10]. Since the technologies are designed in a way that they can meet the need to cater to a diverse setting where learners hopefully may show lasting gains, they will then address not only the attentive learners in the classroom but also those low-achievers as well, which are technically the ones who always suffer from a lack of confidence, motivation, or anxiety [6,17].

4.2. Implications

According to past literature, studies on emotion-aware teaching so far never really ceased to stress the significance of developing emotions in learning. However, there is more to this approach where it also investigates balancing the intellectual elements of academics while integrating the thinking and emotional components to experience a more balanced and supportive learning setting [16]. Whenever there is a safe and enriching environment for emotional wellness of learners, they will magically learn better. Therefore, it is a big leap toward shaping the "whole student," and not just an academic excellence student.

Thus, emotion-aware teaching has been made possible through technology. All the new devices that can interpret facial expressions, tonal colors, and other emotional signals could certainly assist the teachers in adjusting their lessons accordingly on-the-spot so that the feelings of the students become focused in the learning environment [18,19]. For example, if there is someone who appears to be anxious, or might want a break and some encouraging words, the system can portray their needs. This is truly considered a revolutionary personalization, which is something that was not possible before.

Further, these tools should also ensure environments that better support mental health [5,9]. On the dark side, concerns have been raised due to storing emotional data within the memory of these tools: Does it challenged with the concept of privacy and fairness, prejudiced against the intellectual development of ethical issues, and meet the genuine advantage concerns for intellectual development that Humanism strives its hardest to uphold for the sake of a clean handshake between technology and the learner [7,10]?

4.3. Limitations

While some extremely great advantages are found with emotion-aware language learning, it does have limitations too. Existing emotion-recognition models are limited in their own way because of the cultural biases in the master training datasets. There is no such smart number or exact calculus that can misread emotions; however, umpteen emotions, across different emotional states or syndromes, most certainly embody an amalgamation of confusion, while a sound model would properly recognize such mental painful expressions [19]. Also, most of the available research has, so far, been experiment-oriented, while others presented only small-scale cases, and ultimately this has greatly limited the generalizability of this type of teaching across different educational contexts [11,16].

The remaining complexity exists in combining AI with the equally difficult protests and negations of the accuracies of human emotion; this specific nature is context-bound and problematic for attempts in category under the designated states [7,15]. Nonetheless, while the desire for emotional AI is absolute, the evidence of its long-term influence on the various outcomes of learners and the roles of educators is lacking.

4.4. Future Research

Future research in this regard could be aimed at cross-culturally testing emotion-aware teaching in varying settings that include marginalized areas and multilingual classrooms [1,8]. Applied research designs are necessary to determine the sustained implementation of the method regarding improved motivation, emotional regulation, autonomy, and self-discipline over a desirable period for long-term effects.

Higher interdisciplinary kinds of integration would be much more apparent after restructuring the models of emotional recognition, which means involving the integration of psychological, linguistic, and computer science insights [3,18]. One of the other aspects that future research should investigate is the development of an ethical framework that can ensure the learners' data security while identifying their emotional awareness [10]. Other than that, it is also important to consider how teaching in the future could work together with the adoption of emotional AI in the classroom.

4.5. Conclusion

In conclusion, this paper highlights the use of emotion-aware teaching in transforming the current language learning phenomenon. It reaffirms the roles that emotions play in one's language development. Also, this review implies that the use of emotional AI tools should also be widely encouraged in the classroom to identify the emotions of the students, which could then assist them to build their motivation, resilience, and fun in the respective language classrooms. Nevertheless, it is also not to dismiss the ethical concerns that are raised in the paper regarding the

protection of the students' privacy and consent to disclose their emotional data collected in the classroom.

This research is mainly focusing on integrating the idea of emotional intelligence, artificial intelligence, and teaching pedagogies to promote attention on these aspects in the education system nowadays. It presents new perspectives on how emotional awareness can work smoothly with technology in enhancing the academic outcomes of the students. In this case, the students that follow the system will not only be one with academic excellence, but also with great maintenance of their well-being. In addition to that, this paper also provides great clarity and direction for future researchers to work on. For instance, how emotional AI can be further personalized or modified so that it is more applicable in different contexts. Some of the action recommendations that educators should consider include experimenting with emotion-aware platforms to create more adaptive lessons; institutions should train teachers in terms of their emotional AI literacy; and researchers should then investigate long-term impacts on learner autonomy, mental health, and cultural adaptability.

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